WHAT IS CLAIMED IS:

1. An electronic network system, comprising:

a central office configured to provide a plurality of communication paths; and

a customer premises coupled to the central office by a first communication path and a second communication path, the customer premises including a transceiver configured to reduce the effects of far end cross talk and near end cross talk on signals from the central office to the customer premises.

2. The electronic network system of claim 1, wherein the transceiver is an ADSL transceiver unit-remote (ATU-R) and the signals are ADSL signals.

3. The electronic network system of claim 1, wherein the transceiver includes

a first adaptive filter configured to filter a signal received via a first communication path by a first adaptive filter function to produce a first output;

a second adaptive filter configured to filter a signal received via a second communication path by a second adaptive filter function to produce a second output;

a first adder configured to subtract the second output from the signal received via the first communication path to produce a first sum;

a second adder configured to subtract the first output from the signal received via the second communication path to produce a second sum;

a third adaptive filter configured to filter a signal transmitted on the second communication path by a third adaptive filter function to produce a third output;

a fourth adaptive filter configured to filter a signal transmitted on the first communication path by a fourth adaptive filter function to produce a fourth output;

a third adder configured to subtract the third output from the first sum; and

a fourth adder configured to subtract the fourth output from the second sum.

4. The electronic network system of claim 3, wherein the first adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the first communication path to the second communication path.

5. The electronic network system of claim 3, wherein the second adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the second communication path to the first communication path.

6. The electronic network system of claim 3, wherein the third adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the first communication path to the second communication path.

7. The electronic network system of claim 3, wherein the fourth adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the second communication path to the first communication path.

8. The electronic network system of claim 3, wherein a third sum from the third adder and a fourth sum from the fourth adder are input to a digital signal processor that multiplexes the third sum and the fourth sum to produce a single received signal.

9. A method comprising the steps of:

receiving a first signal from a first communication path;

receiving a second signal from a second communication path;

filtering the first signal by a first adaptive filter function to produce a first output;

filtering the second signal by a second adaptive filter function to produce a second output;

subtracting the first output from the second signal to produce a second sum;

subtracting the second output from the first signal to produce a first sum;

filtering a first transmitted signal by a fourth adaptive filter function to produce a fourth output;

filtering a second transmitted signal by a third adaptive filter function to produce a third output;

subtracting the third output from the first sum to produce a third sum; and

subtracting the fourth output from the second sum to produce a fourth sum.

10. The method of claim 9, wherein the first adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the first communication path to the second communication path.

11. The method of claim 9, wherein the second adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the second communication path to the first communication path.

12. The method of claim 9, wherein the third adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the first communication path to the second communication path.

13. The method of claim 9, wherein the fourth adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the second communication path to the first communication path.

14. The method of claim 9, further comprising the step of multiplexing the third sum and the fourth sum to produce a single received signal.

15. A transceiver comprising:

means for receiving a first signal from a first communication path;

means for receiving a second signal from a second communication path;

means for filtering the first signal by a first adaptive filter function to produce a first output;

means for filtering the second signal by a second adaptive filter function to produce a second output;

means for subtracting the first output from the second signal to produce a second sum;

means for subtracting the second output from the first signal to produce a first sum;

means for filtering a first transmitted signal by a fourth adaptive filter function to produce a fourth output;

means for filtering a second transmitted signal by a third adaptive filter function to produce a third output;

means for subtracting the third output from the first sum to produce a third sum; and

means for subtracting the fourth output from the second sum to produce a fourth sum.

16. The transceiver of claim 15, wherein the first adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the first communication path to the second communication path.

17. The transceiver of claim 15, wherein the second adaptive filter function is approximately equal to a transfer function that represents the effects of far end cross talk from the second communication path to the first communication path.

18. The transceiver of claim 15, wherein the third adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the first communication path to the second communication path.

19. The transceiver of claim 15, wherein the fourth adaptive filter function is approximately equal to a transfer function that represents the effects of near end cross talk from the second communication path to the first communication path.

20. The transceiver of claim 15, further comprising the step of multiplexing the third sum and the fourth sum to produce a single received signal.